CLAIMS

What is claimed is:

1. A method employed by a controlling radio network controller (C-RNC) and a serving RNC (S-RNC) for allocating capabilities to a wireless transmitter/receiver unit (WTRU) for point to point (PtP) and point to multipoint (PtM) services, comprising:

said C-RNC:

conveying communication capabilities obtained from said WTRU to said S-RNC;

said S-RNC:

allocating capabilities responsive to a desired service; and

conveying the allocations to said C-RNC.

2. The method of claim 1 wherein said C-RNC:

provides PtM service to said WTRU employing capabilities provided by said S-RNC.

3. The method of claim 1 wherein said C-RNC:

provides PtP service to the WTRU;

said S-RNC:

notifies said C-RNC to activate PtM service; and

said C-RNC:

activates PtM service simultaneously with PtP service based upon the allocations provided by said S-RNC.

4. The method of claim 3 wherein the allocation provided by said S-RNC comprises:

reducing the PtP capabilities to provide simultaneous PtP and PtM services.

5. The method of claim 3 wherein:

said S-RNC:

advises said C-RNC that no change be made in the PtP capabilities based upon WTRU capabilities which are sufficient to enable PtM service without reduction in capabilities employed for PtP service.

6. The method of claim 1 wherein said C-RNC:

provides PtP service to the WTRU;

said S-RNC:

notifies said C-RNC to activate PtM service; and

said C-RNC:

activates PtM service and terminates PtP service based upon allocations provided by said S-RNC.

7. The method of claim 6 wherein said C-RNC employs all of the capabilities of the WTRU to provide PtM services.

8. The method of Claim 1 wherein said C-RNC:

provides PtP service to the WTRU:

said S-RNC:

notifies said C-RNC to activate PtM service; and

said C-RNC:

prevents PtM service simultaneously with PtP service based upon the allocations provided by said S-RNC.

9. A method for controlling point to point (PtP) and point to multipoint (PtM) services in wireless communications wherein at least one wireless transmitter/receiver unit (WTRU) is capable of communications with a plurality of cells, each cell having a controlling radio network controller (C-RNC) and a serving RNC (S-RNC) comprising;

said WTRU:

selecting one of said cells; and

providing the C-RNC of said one of said cells with a cell update identifying capabilities of the WTRU;

said C-RNC of said one cell:

providing the cell update the S-RNC of said one cell;

said S-RNC of said one cell:

confirming the cell update of the WTRU to said C-RNC of said one cell; and

upon activation of PtM service, conveying capabilities of the WTRU to be allocated for PtM service.

10. The method of claim 9 wherein said C-RNC of said one cell:

initiates PtM service to the WTRU employing capabilities allocated by said S-RNC of said one cell.

11. The method of claim 9 wherein said S-RNC of said one cell, based upon the capabilities of the WTRU:

instructs said C-RNC of said one cell to allocate PtP and PtM services according to the WTRU capabilities to enable PtP and PtM services to be performed simultaneously.

12. The method of claim 9 wherein said S-RNC of said one cell, based upon the capabilities of the WTRU:

instructs said C-RNC of said one cell to stop PtP services while said S-RNC of said one cell provides PtM services.

13. The method of claim 9 wherein said S-RNC of said one cell:

confirms a cell update directly to the WTRU responsive to receipt of a cell update from said C-RNC of said one cell.

14. A method for enhancing point to point (PtP) and point to multipoint (PtM) services provided to a WTRU by a cell having a S-RNC and a C-RNC, comprising:

said S-RNC:

initiating a radio link (RL) setup request with said C-RNC responsive to a handover condition;

said C-RNC:

providing the S-RNC with PtP resources, responsive to the RL setup request;

said S-RNC:

instructing the C-RNC to activate PtM capabilities;

said C-RNC:

providing confirmation to the S-RNC activation instruction; and

said S-RNC:

providing a handover request to the WTRU.

15. The method of claim 14 wherein said C-RNC:

initiates PtM service.

16. A method for enhancing point to point (PtP) and point to multipoint (PtM) services provided to a wireless transmit/receive unit (WTRU) by a cell having a C-RNC and an S-RNC, comprising:

said S-RNC:

initiating a radio link (RL) setup request with said C-RNC responsive to a handover condition;

said C-RNC:

acknowledging the RL setup request and establishing PtM capabilities;

said S-RNC:

conveying a handover request to the WTRU responsive to said acknowledgment; and

said C-RNC:

initiating PtM service to the WTRU.

17. The method of claim 16 wherein the S-RNC:

stores capabilities of the WTRU; and

conveys the stored capabilities to a C-RNC that will communicate with the WTRU responsive to a handover.

18. A method for establishing point to multipoint (PtM) service for at least one wireless transmitter/receiver unit (WTRU) entering a cell having a C-RNC and an S-RNC, comprising:

said WTRU:

providing a cell update to the cell;

said C-RNC:

informing said S-RNC, responsive to said WTRU's cell update; and

said S-RNC:

confirming said cell update to said WTRU;

19. The method of claim 18 wherein said WTRU providing a cell update further comprises:

providing transport and physical processing capabilities.

20. The method of claim 18 wherein said WTRU providing a cell update further comprises:

providing cell transport capabilities which comprise:

providing a number of transmitted bits per frame and a number of different combinations of bits allowed.

21. The method of claim 18 wherein said WTRU providing a cell update further comprises:

providing physical processing capabilities comprising:

number and types of physical channels and parameters of allowed spreading factors.

22. Apparatus for allocating capabilities for point to point (PtP) and point to multipoint (PtM) services, comprising:

a controlling radio network controller (C-RNC) comprising:

means for conveying communication capabilities obtained from a wireless transmitter/receiver unit (WTRU) to a serving RNC (S-RNC);

said S-RNC comprising:

means for allocating capabilities responsive to a desired service; and

means for conveying the allocations to said C-RNC.

23. The apparatus of claim 22 wherein said C-RNC further comprises:

means for providing PtM service to a WTRU employing capabilities provided by said S-RNC.

24. The apparatus of claim 22 wherein said C-RNC further comprises:

means for providing PtP service to the WTRU;

said S-RNC comprising:

means to notify said C-RNC to activate PtM service; and

said C-RNC further comprises:

means to activate PtM service simultaneously with PtP service based upon the allocations provided by said S-RNC.

25. The apparatus of claim 24 wherein the allocation means provided by said S-RNC further comprises:

means for reducing the PtP capabilities to provide simultaneous PtP and PtM services.

26. The apparatus of claim 24 wherein said S-RNC further comprises:

means to advise said C-RNC that no change be made in the PtP capabilities based upon WTRU capabilities which are sufficient to enable PtM service without reduction in capabilities employed for PtP service.

27. The apparatus of claim 22 wherein said C-RNC comprises:

means to provide PtP service to the WTRU;

said S-RNC comprises:

means to notify said C-RNC to activate PtM service; and

said C-RNC comprises:

means to activate PtM service and terminates PtP service based upon allocations provided by said S-RNC.

28. The apparatus of claim 27 wherein said C-RNC employs all of the capabilities of the WTRU to provide PtM services.

29. The apparatus of claim 22, wherein said C-RNC comprises:

means to provide PtP service to the WTRU:

said S-RNC comprises:

means to notify said C-RNC to activate PtM service; and

said C-RNC comprises:

means to prevent PtM service simultaneously with PtP service based upon the allocations provided by said S-RNC.

30. The apparatus of claim 22 wherein said S-RNC comprises means for servicing a plurality of C-RNCs.

31. The apparatus of claim 22 wherein said C-RNC further comprises:

means for providing PtP service to the WTRU;

said S-RNC comprising:

means to notify said C-RNC to discontinue PtM service; and

means to activate PtP service.

32. The apparatus of claim 31 wherein said means to notify said C-RNC to discontinue PtM service further comprises:

means for requesting the WTRU to stop reception of PtM service based upon an implicit rule.

33. The apparatus of claim 31 wherein said means to notify said C-RNC to discontinue PtM service further comprises:

means for requesting the WTRU to stop reception of PtM service based upon a WTRU capability.

34. The apparatus of claim 31 wherein said means to notify said C-RNC to discontinue PtM service further comprises:

means for requesting the WTRU to stop reception of PtM service based upon a stored configuration of the WTRU.

35. Apparatus for controlling point to point (PtP) and point to multipoint (PtM) services in wireless communications comprising;

a wireless transmitter/receiver unit (WTRU) comprising:

means for selecting a new cell; and

means for providing a controlling radio network controller (C-RNC) in the new cell with a cell update identifying capabilities of the WTRU;

said C-RNC comprising:

means for providing the cell update to a serving RNC (S-RNC);

said S-RNC comprising:

means for confirming the cell update of the WTRU to said C-RNC; and

means for conveying capabilities of the WTRU to be allocated for PtM service responsive to activation of PtM service.

36. The apparatus of claim 35 wherein said C-RNC comprises:

means to initiate PtM service to the WTRU employing capabilities allocated by said S-RNC.

37. The apparatus of claim 35 wherein said S-RNC, responsive to the capabilities of the WTRU comprises:

means to instruct said C-RNC to allocate the WTRU capabilities between PtP and PtM services to enable PtP and PtM services to be performed simultaneously.

38. The apparatus of claim 35 wherein said S-RNC, responsive to the capabilities of the WTRU comprises:

means to instruct said C-RNC to stop PtP services while said S-RNC provides PtM services.

39. The apparatus of claim 35 wherein said S-RNC comprises:

means to confirm a cell update directly to the WTRU responsive to receipt of a cell update from said C-RNC.

40. The apparatus of claim 35 wherein said S-RNC comprises means for servicing a plurality of C-RNCs.

41. Apparatus for enhancing point to point (PtP) and point to multipoint (PtM) services provided to a wireless transmit/receive unit (WTRU) comprising:

a serving radio network controller (S-RNC) comprising:

means to initiate a radio link (RL) setup request with a controlling RNC (C-RNC) responsive to a handover condition;

said C-RNC comprising:

means for providing said S-RNC with PtP resources, responsive to the RL setup request;

said S-RNC further comprising:

means for instructing said C-RNC to activate PtM capabilities;

said C-RNC further comprising:

means for providing confirmation to said S-RNC activation instruction; and

said S-RNC comprising:

means for providing a handover request to the WTRU.

42. The apparatus of claim 41 wherein the C-RNC comprises:

means to initiate PtM service.

43. The apparatus of claim 41 wherein the said S-RNC further comprises means to store capabilities of the WTRU; and

means to convey the stored capabilities to a C-RNC that will communicate with the WTRU responsive to a handover.

44. The apparatus of claim 40 wherein said S-RNC comprises means for servicing a plurality of C-RNCs.

45. Apparatus for enhancing point to point (PtP) and point to multipoint (PtM) services provided to a wireless transmit/receive unit (WTRU), comprising:

a serving radio network controller (S-RNC) comprising:

means for initiating a radio link (RL) setup request with a controlling RNC (C-RNC) responsive to a handover condition;

said C-RNC comprising:

means for acknowledging the RL setup request and establishing PtM capabilities;

said S-RNC further comprising:

means for conveying a handover request to the WTRU responsive to said acknowledgment; and

said C-RNC comprising:

means for initiating PtM service to the WTRU.

46. The apparatus of claim 45 wherein said S-RNC comprises means for servicing a plurality of C-RNCs.

47. Apparatus for establishing point to multipoint (PtM) service for at least one wireless transmitter/receiver unit (WTRU) entering a cell, comprising:

said WTRU comprising:

means for providing a cell update in the cell;

a controlling radio network controller (C-RNC) in the cell comprising:

means for informing a serving radio network controller (S-RNC) in the cell of said update, responsive to the WTRU's cell update; and

said S-RNC comprising:

means for confirming said cell update to said WTRU responsive to said C-RNC.

48. The apparatus of claim 47, wherein said WTRU providing a cell update further comprises:

means for providing transport and physical processing capabilities.

49. The apparatus of claim 47 wherein said WTRU providing a cell update further comprises:

means providing cell transport capabilities which comprise:

means for providing a number of transmitted bits per frame and a number of different combinations of bits allowed.

50. The apparatus of claim 47 wherein the means for providing a cell update further comprises:

means for providing physical processing capabilities comprising:

means for providing number and types of physical channels and parameters of allowed spreading factors.

51. The apparatus of claim 47 wherein said S-RNC comprises means for servicing a plurality of C-RNCs.